

Exhibit 4

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

S.O.I.TEC SILICON ON INSULATOR
TECHNOLOGIES S.A. and
SOITEC USA, INC.,

Plaintiffs and Counterclaim
Defendants,

v.

MEMC ELECTRONIC MATERIALS, INC.,

Defendant and Counterclaim
Plaintiff.

JURY TRIAL DEMANDED

Civil Action No.: 05-806-KAJ

**MEMC'S RESPONSES TO
SOITEC'S FIRST SET OF INTERROGATORIES (NOS. 1-16)**

Defendant Counterclaim Plaintiff MEMC Electronic Materials, Inc. ("MEMC") hereby responds to the First Set of Interrogatories (Nos. 1-16) ("Interrogatories") of Plaintiff and Counterclaim Defendants S.O.I.T.E.C. Silicon On Insulator Technologies S.A. and Soitec USA, Inc. (collectively, "Soitec") as follows:

General Objections

1. MEMC objects to the extent the Interrogatories seek documents or information protected by the attorney-client privilege and/or the work product doctrine.
2. MEMC objects to the Interrogatories to the extent they seek to impose obligations beyond those provided in the Federal Rules of Civil Procedure or local rules.
3. To the extent a response is provided by reference to documents being produced, MEMC incorporates by reference herein its objections to Soitec's First Request for Production of Documents.
4. Consistent with Fed. R. Civ. P. 33(d), MEMC objects to providing responses to

Interrogatories where the information can be derived from documents which are being produced for inspection in response to related document requests propounded by Soitec.

5. MEMC reserves the right to supplement these responses during the course of discovery as additional information is ascertained.

6. MEMC objects to Soitec's definition of "Related Patents and Applications" to the extent it includes U.S. Patent No. 5,919,302 or any foreign counterparts of the '302 patent. This patent was one of the six patents previously dropped from this lawsuit by agreement of the parties and so it is no longer in suit. Soitec's definition to include the '302 patent results in Interrogatories that are unduly burdensome and that seek information that is irrelevant and/or not reasonably calculated to lead to the discovery of admissible evidence.

7. MEMC objects to Soitec's definition of "Prior Art," particularly the "relating in any way" language, to the extent it is vague, indefinite, overly broad, unduly burdensome and inconsistent with Title 35 of the United States Code.

INTERROGATORIES

1. For each Asserted Claim, explain in detail the basis for MEMC's allegation that Soitec infringes that claim, identifying each Soitec product that is alleged to infringe any Asserted Claim.

Response:

MEMC objects to Interrogatory No. 1 on the grounds that it is premature, calls for a legal conclusion and is the subject of expert testimony which, per the Court's Scheduling Order, is not due until December 4, 2006. MEMC has not yet received any of Soitec's documents or things in discovery in this litigation, nor has MEMC conducted any depositions of any of Soitec's witnesses yet. MEMC has not received discovery concerning other products in Soitec's product

line which might infringe. MEMC reserves the right to supplement this response as discovery proceeds and Soitec's position and products become known. Subject to and without waiver of its objections, MEMC responds at this time as follows.

Soitec infringes at least claims 1, 9 and 10 of the '104 patent through the sale of the Soitec UNIBOND SOI product in the United States.

As for claim 1, the Soitec UNIBOND SOI product has a handle wafer, a device layer and an insulating layer between the handle wafer and the device layer. The device layer is a single crystal silicon device layer which comes from the top layer of a single crystal Czochralski silicon donor wafer ("CZ donor wafer"). The remaining portion of the CZ donor wafer (after it donates the top layer) can be used several times to donate additional device layers for additional UNIBOND SOI products. Each Soitec UNIBOND SOI product has the circular shape of a conventional silicon wafer. Thus, each device layer has the circular shape of a conventional silicon wafer. Each device layer thus has a central axis through the center of the device layer, a circumferential edge around the periphery of the device layer, and a radius between the center point and the periphery of the device layer. MEMC obtained samples of Soitec's CZ donor wafers from which the device layers are derived as part of the litigation in France between the parties. Tests of those CZ donor wafers show that they contain a predominant intrinsic point defect. Tests also show that at the center of the CZ donor wafer (which becomes the center of the device layer in the Soitec UNIBOND SOI product) there is an axially symmetric region containing predominantly vacancy intrinsic point defects without any agglomerated intrinsic point defects. As such, this axially symmetric region contains "a predominate intrinsic point defect, which is substantially free of agglomerated intrinsic point defects" within the language of claim 1. Since all of the elements of claim 1 are found in the Soitec UNIBOND SOI products,

claim 1 is infringed when Soitec sells them in the United States.

As for claim 9, tests of the Soitec CZ donor wafers show that they have an oxygen content which is well below 13 PPMA. As such, the device layer in the Soitec UNIBOND SOI products has "an oxygen content which is less than about 13 PPMA." Since all of the elements of claim 9 are found in the Soitec UNIBOND SOI products (please see the above paragraph for coverage of the elements recited in claim 1), claim 9 is infringed when Soitec sells the Soitec UNIBOND SOI products in the United States.

As for claim 10 and as explained above in the paragraph for claim 1, tests show that at the center of the Soitec CZ donor wafer (which becomes the center of the device layer in the Soitec UNIBOND SOI product) there is an axially symmetric region containing predominantly vacancy intrinsic point defects without any agglomerated intrinsic point defects. As such, "vacancies are the predominant intrinsic point defect" within this axially symmetric region at the center of the device layer as required by claim 10. Thus, all of the elements of claim 10 are found in the Soitec UNIBOND SOI products (please see the above paragraph for coverage of the elements recited in claim 1). Claim 10 is infringed when Soitec sells the Soitec UNIBOND SOI products in the United States.

2. Separately for each Asserted Claim, state how you construe each limitation of that claim which you believe to require construction; the scope of equivalents under the doctrine of equivalents to which you contend the limitation is entitled; and the factual basis for your contentions.

Response:

MEMC objects to Interrogatory No. 2 on the grounds that it is premature, calls for a legal conclusion and is the subject of expert testimony which, per the Court's Scheduling Order, is not

due until December 4, 2006. MEMC has not yet received any of Soitec's documents or things in discovery in this litigation, nor has MEMC conducted any depositions of any of Soitec's witnesses yet. MEMC has not received discovery concerning other products in Soitec's product line which might infringe. MEMC has also not received any claim construction from Soitec. MEMC reserves the right to supplement this response as discovery proceeds and Soitec's position becomes known. Subject to and without waiver of its objections, MEMC responds at this time as follows.

The phrase "single crystal silicon device layer" should be construed to mean a device layer derived from a single crystal silicon wafer which is substantially free of agglomerated intrinsic point defects. *See* the '104 patent at column 1, lines 10-15. *See also* the '104 patent at column 14, lines 34-48; column 16, lines 13-17; column 17, lines 47-51; column 19, lines 59-61, and the related disclosure in the '104 patent specification. Here, the Soitec CZ donor wafer is such a single crystal silicon wafer substantially free of agglomerated intrinsic point defects. Again, the Soitec CZ donor wafer is the wafer from which the device layer in the Soitec UNIBOND SOI product is derived.

3. Separately for each product identified in response to Interrogatory No. 1, describe the circumstances by which MEMC first became aware of the product, including the date and the person(s) who were present.

Response:

MEMC objects to Interrogatory No. 3 as being overly broad and unduly burdensome, vague and seeking irrelevant information not likely to lead to the discovery of admissible evidence. Subject to and without waiver of its objections, MEMC will produce relevant, responsive, and non-privileged documents in its possession, custody, or control, sufficient to

provide such requested information, in accordance with Fed. R. Civ. P. 33(d).

4. Identify each article that is or has been manufactured or sold or offered for sale by or on behalf of MEMC that embodies any of the Asserted Claims and state in detail the basis for your belief that the identified article embodies the Asserted Claim.

Response:

MEMC objects to Interrogatory No. 4 as being overly broad and unduly burdensome, vague and seeking irrelevant information not likely to lead to the discovery of admissible evidence. Subject to and without waiver of its objections, MEMC responds as follows.

MEMC made less than ten SOI products as engineering samples on a test basis in December 2004 and shipped them in a split lot in January 2005. At least some of these samples were covered by the Asserted Claims. Since then, MEMC has made and shipped a small number of additional SOI products covered by an Asserted Claim. These SOI products had the circular shape of a conventional silicon wafer. The device layer for these products was made from a single crystal CZ silicon donor wafer believed to have a central axis containing vacancy intrinsic point defects as the predominant intrinsic point defect and being substantially free of agglomerated intrinsic point defects.

5. For each invention covered by each Asserted Claim, describe in detail the conception of the invention, reduction of the invention to practice, and diligence in reducing the invention to practice.

Response:

MEMC objects to Interrogatory No. 5 as being overly broad and unduly burdensome, vague and seeking irrelevant information not likely to lead to the discovery of admissible evidence. Subject to and without waiver of its objections, MEMC responds as follows.

Dr. Robert J. Falster conceived of the invention covered by claims 1 and 9 prior to a meeting with Soitec on October 30, 1996. Dr. Falster had previously conceived and reduced to practice a CZ silicon wafer containing an axially symmetric region substantially free of agglomerated intrinsic point defects where the predominant intrinsic point defect was interstitial. Dr. Falster believed such a wafer would provide better performance than the wafers then used by the integrated circuit industry. In advance of his meeting with Soitec on October 30, 1996, Dr. Falster knew that Soitec's primary product at that time was the SOI product. Dr. Falster conceived of using his CZ silicon wafer as the donor wafer to provide the device layer in the Soitec SOI product prior to the meeting. This was a conception of claims 1 and 9.

Dr. Falster conceived a CZ silicon wafer containing an axially symmetric region of predominant vacancy intrinsic point defects and substantially free of agglomerated vacancy intrinsic point defects in 1997. In addition, Dr. Falster conceived of using such a wafer as the donor wafer for the device layer in an SOI structure. This was a conception of claim 10.

Claims 1, 9 and 10 were constructively reduced to practice on September 2, 1998, when U.S. Provisional Application No. 60/098,902 was filed with the United States Patent and Trademark Office.

6. For the period prior to September 2, 1998, describe in detail each sale, offer for sale, or other commercial or public use or disclosure of each product embodying any invention covered by each Asserted Claim.

Response:

None.

7. Separately for each Asserted Claim, describe in detail the applicability of each of the secondary considerations of non-obviousness as set forth in *Graham v. John Deere*, 383 U.S.

1 (1966) and its progeny to the Asserted Claim.

Response:

MEMC objects to Interrogatory No. 7 on the grounds that it seeks information protected by the attorney-client privilege and the work product doctrine. MEMC further objects to Interrogatory No. 7 on the grounds that it is premature, calls for a legal conclusion and is the subject of expert testimony which, per the Court's Scheduling Order, is not due until December 4, 2006. MEMC has not yet received any of Soitec's documents or things in discovery in this litigation, nor has MEMC conducted any depositions of any of Soitec's witnesses yet. MEMC has not received discovery concerning other products in Soitec's product line which might infringe. MEMC further objects on the grounds that Soitec has not identified any combination of prior art references under 35 U.S.C. Section 103 such that it is premature and unfounded to discuss any *Graham* secondary considerations. MEMC reserves the right to supplement this response as discovery proceeds and Soitec's position becomes known. Subject to and without waiver of its objections, MEMC responds at this time as follows.

The invention covered by claims 1, 9 and 10 has been a tremendous commercial success as seen from the commercial success Soitec has enjoyed selling the accused Soitec UNIBOND SOI product. The invention covered by claims 1, 9 and 10 also met a long-felt but unresolved need. More particularly, SOI products made using an epitaxially grown device layer had problems in the SOI bonding process (hillocks, epi spikes, etc.) as well as problems in device layers arising from EPI stacking faults. Donor wafers sliced from ingots and substantially free of agglomerated intrinsic point defects, as with the present invention, bond well to provide a well bonded device layer which eliminates the prior problems found with an EPI grown device layer. Unexpected results enjoyed from use of the invention covered by claims 1, 9 and 10 include the

manufacture of SOI products containing ingot derived agglomerated intrinsic point defect free device layers have improved quality, both because they are substantially free of agglomerated intrinsic point defects and because they are free of defects often found in EPI derived device layers. In addition, SOI products may be produced more economically because they allow multiple uses of the donor wafer while providing device layers which are substantially free of agglomerated intrinsic point defects.

8. For each of the patents-in-suit and the Related Patents and Applications, describe in detail the licensing history (that is, the terms of all licenses; all requests for, offers to, or demands of license; and all negotiations and communications regarding the foregoing), if any.

Response:

MEMC objects to Interrogatory No. 8 as being overly broad and unduly burdensome, vague and seeking irrelevant information not likely to lead to the discovery of admissible evidence. Subject to and without waiver of its objections, MEMC will produce relevant, responsive, and non-privileged documents in its possession, custody, or control, sufficient to provide such requested information, in accordance with Fed. R. Civ. P. 33(d).

9. State the amount and describe the calculation of and any other bases for all damages to which MEMC contends it is entitled as a result of Soitec's alleged infringement of the Asserted Claims.

Response:

MEMC objects to Interrogatory No. 9 on the grounds that it is premature and is the subject of expert testimony which, per the Court's Scheduling Order, is not due until December 4, 2006. MEMC does not have pertinent financial information from Soitec, including the amount of sales of the infringing products, which is needed to calculate damages. MEMC has

not yet received any of Soitec's documents or things in discovery in this litigation, nor has MEMC conducted any depositions of any of Soitec's witnesses yet. MEMC has not received discovery concerning other products in Soitec's product line which might infringe. MEMC reserves the right to supplement this response as discovery proceeds and Soitec's position and products become known.

10. Describe MEMC's compliance with 35 U.S.C. § 287 with respect to each of the patents-in-suit, identifying all documents and things evidencing MEMC's compliance.

Response:

In a letter dated October 15, 2004, from Dr. Shaker Sadasivam of MEMC to Mr. Emmanuel Huyghe of Soitec, MEMC put Soitec on actual notice of the '104 patent and of the infringing UNIBOND wafers. Prior to this letter, MEMC had no product to mark.

11. For each wafer seized by you pursuant to the order of the court of Lyons, France dated December 12, 2005, state whether you contend that the wafer contains a layer having a central axis, a circumferential edge, a radius extending from the central axis to the circumferential edge, and a first axially symmetric region, in which there is a predominant intrinsic point defect, that is substantially free of agglomerated intrinsic point defects, and describe in detail the factual basis for your contention that such a layer is or is not present.

Response:

MEMC objects to Interrogatory No. 11 on the grounds that it is premature, calls for a legal conclusion and is the subject of expert testimony which, per the Court's Scheduling Order, is not due until December 4, 2006. MEMC has not yet received any of Soitec's documents or things in discovery in this litigation, nor has MEMC conducted any depositions of any of Soitec's

witnesses yet. MEMC reserves the right to supplement this response as discovery proceeds and Soitec's position and products become known. Subject to and without waiver of its objections, MEMC responds at this time as follows.

As explained more fully in MEMC's response to Interrogatory No. 1 (which response is incorporated herein by reference), the wafers obtained from the French litigation were the generally circular Soitec CZ donor wafers from which the device layers for the Soitec UNIBOND SOI product are made. The Soitec CZ donor wafers are single crystal CZ wafers sliced from an ingot. The generally circular Soitec CZ donor wafers thus have a central axis, a circumferential edge, and a radius extending from the central axis to the circumferential edge.

Tests of these CZ donor wafers show that they contain a predominant intrinsic point defect. Tests also show that at the center of the CZ donor wafer (which becomes the center of the device layer in the Soitec UNIBOND SOI product) there is an axially symmetric region containing predominantly vacancy intrinsic point defects without any agglomerated intrinsic point defects. Tests of the Soitec CZ donor wafers also show that they have an oxygen content which is well below 13 PPMA. Thus, the Soitec CZ donor wafers are used to donate the device layer for the accused Soitec UNIBOND SOI product; however, the Soitec CZ donor wafers standing alone do not have such a SOI structure.

12. State whether MEMC has licensed Shin-Etsu Handotai Co., Ltd. ("SEH") or any affiliated entity to practice any of the patents-in-suit or Related Patents and Applications or whether MEMC has covenanted not to sue SEH for any infringement of any of the patents-in-suit or Related Patents and Applications and state the terms of the license or covenant.

Response:

MEMC objects to Interrogatory No. 12 as being overly broad and unduly burdensome,

vague and seeking irrelevant information not likely to lead to the discovery of admissible evidence. Subject to and without waiver of its objections, MEMC will produce a copy of an agreement between MEMC and SEH containing a covenant not to sue, in accordance with Fed. R. Civ. P. 33(d).

13. Describe in detail all methods by which you contend it is possible to determine whether there is a predominant intrinsic point defect and/or a region that is substantially free of agglomerated intrinsic point defects in the device layer of any product that you contend infringes the Asserted Claims.

Response:

MEMC objects to Interrogatory No. 13 on the grounds that it is overly broad, unduly burdensome and seeks irrelevant information not likely to lead to the discovery of admissible evidence. MEMC further objects on the grounds that Interrogatory No. 13 is premature, calls for a legal *Markman* conclusion and is the subject of expert testimony which, per the Court's Scheduling Order, is not due until December 4, 2006. MEMC has not yet received any of Soitec's documents or things in discovery in this litigation, nor has MEMC conducted any depositions of any of Soitec's witnesses yet. MEMC has not received discovery concerning other products in Soitec's product line which might infringe. MEMC reserves the right to supplement this response as discovery proceeds and Soitec's position and products become known. Subject to and without waiver of its objections, MEMC responds at this time as follows.

Persons skilled in the art at the time the application for the '104 patent was filed had readily available test procedures for determining whether there is a predominant intrinsic point defect and/or a region that is substantially free of agglomerated intrinsic point defects in the device layer of products covered by claims 1, 9 and 10. A non-exhaustive compilation of such

test procedures are described in the specification of the '104 patent. Other such test procedures were also well known, understood and used by those skilled in the art for determining such characteristics in silicon.

Here, for example, MEMC directly tested Soitec CZ donor wafers from which the device layers for the accused Soitec UNIBOND SOI products are derived (by direct donation of the top layer of the CZ donor wafer) during the Soitec manufacturing process. Such direct measurement on the CZ silicon which actually becomes the device layer showed that vacancies were the predominant intrinsic point defect at the center of the device layer in an axially symmetric region substantially free of agglomerated intrinsic point defects. One test, for example, that showed that vacancies were the predominant intrinsic point defect at the center of the device layer was an oxygen precipitation test following heat treatment. Another test, for example, that showed there were no agglomerated intrinsic point defects at the center of the device layer was the FPD test using a standard etchant for 30 minutes. Other tests well known to those skilled in the art at the time of the filing of the application for the '104 patent could also be used. Much of this was more fully explained in response to Interrogatory No. 1, which response is incorporated herein by reference.

14. Excluding this suit, describe in detail each charge of infringement that MEMC has made with respect to any of the patents-in-suit or Related Patents or Applications, identifying the disposition and/or present status of each such charge.

Response:

MEMC objects to Interrogatory No. 14 as being overly broad and unduly burdensome, vague and seeking irrelevant information not likely to lead to the discovery of admissible evidence. Subject to and without waiver of its objections, MEMC will produce relevant,

responsive, and non-privileged documents in its possession, custody, or control, sufficient to provide such requested information, in accordance with Fed. R. Civ. P. 33(d).

15. If MEMC intends to offer or to introduce any evidence, including, but not limited to, documents, objects, devices, or software (in any form, including source code and/or object code form), or the testimony of any witnesses at the tutorial describing the technology and matters in issue or at the hearing on claim construction in this matter, identify any such evidence and each such witness, and for each witness set forth in detail the testimony that MEMC anticipates he or she will provide at the tutorial and/or hearing.

Response:

MEMC objects to Interrogatory No. 15 on the grounds that it seeks information protected by the attorney-client privilege and the work product doctrine. MEMC further objects to Interrogatory No. 15 on the grounds that it is premature in that MEMC has not yet decided which evidence, witnesses and/or testimony it will use for the tutorial and/or hearing.

16. Identify each source of information that you considered in preparing your responses to these interrogatories including, but not limited to, all persons who provided information that you considered in preparing your responses, all persons who you interviewed in connection with gathering information sought in these interrogatories, and all documents that you reviewed for purposes of gathering information sought in these interrogatories.

Response:

MEMC objects to Interrogatory No. 16 on the grounds that it seeks information protected by the attorney-client privilege and/or the work product doctrine.

As to the objections:

Dated: May 19, 2006

SENNIGER POWERS

By: 

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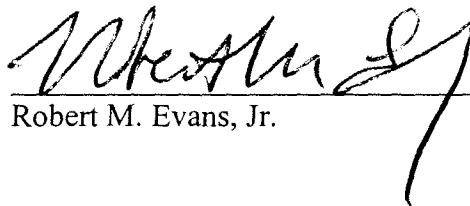
CERTIFICATE OF SERVICE

I, Robert M. Evans, Jr., hereby certify that on this 19th day of May, 2006, I served
MEMC'S RESPONSES TO SOITEC'S FIRST SET OF INTERROGATORIES (NOS. 1-16) on
the attorneys of record at the following addresses as indicated via First Class U.S. Mail:

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Robert M. Evans, Jr.